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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,665	02/20/2004	Jong pyo Lee	71470.0002	5551
57362 7590 01/11/2007 AKERMAN SENTERFITT 801 PENNSYLVANIA AVENUE N.W. SUITE 600 WASHINGTON, DC 20004			EXAMINER LE, HUYEN D	
			ART UNIT	PAPER NUMBER
			2615	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/11/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/781,665

Applicant(s)

LEE, JONG PYO

Examiner

HUYEN D. LE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. Claim 3 recites the limitation "the mean line of the profile" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-2 rejected under 35 U.S.C. 102(a) as being anticipated by Tabata et al. (U.S. patent 6,680,430).

Regarding claim 1, Tabata teaches a diaphragm edge (7a) of a speaker that is formed by compressing a material including silicon rubber (col. 1, lines 31-40) and is embossed on a front surface thereof (col. 11, lines 34-36, col. 14, lines 1-4).

Regarding claim 2, Tabata teaches and shows the first and second adhesion portions (col. 11, lines 40-43), an up-roll or down-roll, and a line as claimed (figures 1, 10, 11, 14-17).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata et al. (U.S. patent 6,680,430).

Regarding claims 3-4, Tabata does not specifically disclose the width and the height of the line and the embossment as claimed. However, Tabata does not restrict to any shape and size for the printed or embossed edge.

Therefore, it would have been obvious to one skilled in the art to provide any shape and size for the printed or embossed speaker edge such as providing a width of the line that is between 0.2 mm-1.4 mm and the maximum height of the line is 0.2 mm-1.3 mm, and the embossment that has an arithmetical mean deviation, a height between 14.25  $\mu\text{m}$  and 120.00  $\mu\text{m}$  and the average roughness between 7.9  $\mu\text{m}$ -97.00  $\mu\text{m}$  for an alternate choice.

6. Claims 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata et al. (U.S. patent 6,680,430) in view of Ogura (U.S. patent 6,039,145) or Sheffer (2003/0134553).

Regarding claim 5, Tabata teaches a diaphragm edge (7a) of a speaker that is formed by compressing a material including silicon rubber (col. 1, lines 31-40) and is embossed on a front surface thereof (col. 11, lines 34-36, col. 14, lines 1-4). Tabata does not teach the powdered viscose rayon for the material in the speaker edge as claimed.

However, providing the material including silicon rubber and viscose rayon or fibers for a diaphragm is known in the art.

Ogura teaches a diaphragm for speakers that comprises an edge portion including rubber material and synthetic resin fibers (col. 4, lines 43-44 and col. 4, lines 62-67 through col. 5, lines

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1-15 and lines 59-63) and Sheffer teaches a diaphragm material for sound absorbers that includes rubber material (22) and fibers (12 and see [0085] and [0133]).

Therefore, it would have been obvious to one skilled in the art to provide the speaker edge of Tabata that includes the rubber material and fibers material such as viscose rayon or powdered viscose rayon, as taught by Ogura or Sheffer, for providing a better stiffness to the edge.

Regarding claims 6, 8 and 10, Tabata does not specifically disclose the embossment of the speaker edge as claimed. However, Tabata does not restrict to any shape and size for the printed or embossed speaker edge.

Therefore, it would have been obvious to one skilled in the art to provide any shape and size for the printed or embossed speaker edge such as providing the embossment that has an arithmetical mean deviation, a height between 14.25  $\mu\text{m}$  and 120.00  $\mu\text{m}$ , and the average roughness between 7.9  $\mu\text{m}$ -97.00  $\mu\text{m}$  for an alternate choice.

Regarding claim 11, Tabata teaches and shows the first and second adhesion portions (col. 11, lines 40-43), an up-roll or down-roll, and a line as claimed (figures 1, 10, 11, 14-17).

Regarding claims 12-13, Tabata does not specifically disclose the width and the height of the line and the embossment as claimed. However, Tabata does not restrict to any shape and size for the printed or embossed edge.

Therefore, it would have been obvious to one skilled in the art to provide any shape and size for the printed or embossed speaker edge such as providing a width of the line that is between 0.2 mm-1.4 mm and the maximum height of the line is 0.2 mm-1.3 mm, and the

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embossment that has an arithmetical mean deviation, a height between 14.25  $\mu$ m and 120.00  $\mu$ m and the average roughness between 7.9  $\mu$ m-97.00  $\mu$ m for an alternate choice

Regarding claim 7, Tabata in view of Ogura and Sheffer does not restrict to any fibrous material (see col. 4, lines 62-67 in Ogura, [0133], [0134] and claim 6 in Sheffer); it therefore would have been obvious to one skilled in the art to provide any type of fibrous material such as viscose rayon being powdered to have a length between 0.1 mm- 3.0 mm depending on the desired frequency characteristics.

Regarding claim 9, Tabata in view of Ogura and Sheffer does not teach the weight ratio between the rubber and the viscose rayon as claimed. However, Tabata in view of Ogura and Sheffer do not restrict to the amount of the rubber material and the fibers or rayon material.

Therefore, it would have been obvious to one skilled in the art to provide any amount of the rubber and fibers or rayon material such as the weight ratio between the silicon rubber and the viscose rayon is 100:3 depending on the desired frequency characteristics.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Okamura et al. (U.S. patent 3,980,841) teaches a speaker edge that comprises an expanded plastic and collagen fibers having the length being equal to or less than 1 mm.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (571) 272-7502. The examiner can normally be reached on 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SINH TRAN can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HL  
January 5, 2006



HUYEN LE  
PRIMARY EXAMINER